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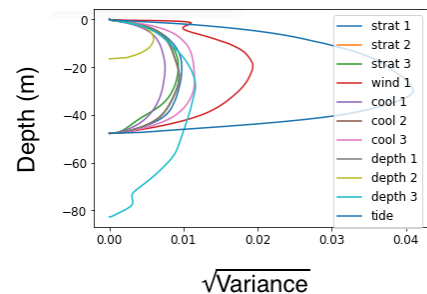
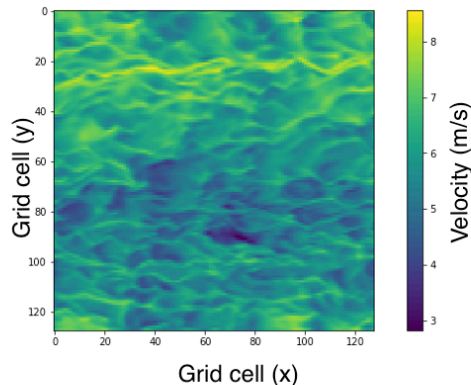
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Advancing representations of turbulence in Earth System Models

(w19_coastalles)

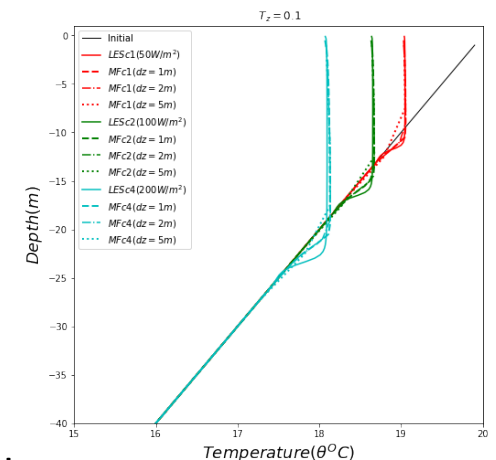
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- We have created a suite of coastally focused Large Eddy Simulation (LES), including a first ever investigation of the influence of the ocean bottom on turbulence.
- We have added important forcing not previously considered in LES models.
- We have evaluated a new more physically realistic and advanced closure against our LES database of simulations.
- Test cases will constrain constants in the new model and help us transition the mixing model from the deep ocean to the coastal ocean for the first time.

Results from our coastal LES test cases. (Top) horizontal velocity near the surface of the ocean for a coastal Langmuir test case. (Bottom) vertical velocity variance for a number of coastal test cases.



Temperature evolution for numerous test cases across surface forcing values. Dashed line is the closure and solid is LES

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